but crepitating. Mucous membrane of the air passages, especially in the minute bronchi, of an ineffaceable red. Nothing remarkable was observed elsewhere.

In this case, the anæsthetic inhalations were only followed by momentary relief. The etherism, sometimes exciting cough and sense of suffocation, aggravated, for the time, the disease. The progress of the disease was not modified by their use, since he died on the fifth day from the beginning of the attack; the usual period at which the tetanic die.

In reflecting on the intense pain seated in the stump, it occurred to me, that direct etherization of the wounded surfaces might remove the painful impressions which were transmitted to the nervous centres, and cure the tetanus by removing the reflex action on the muscular system. It seemed to me that this local and direct etherization of the wounded surfaces would affect with anæsthesia the extremities of the sensitive nerves; interrupt the connection of those nervous extremities with their centres; deprive the nervous system of its painful participation in the suffering of divided parts; remove the muscles and the whole organism from the reaction which violent irritation in the incitor nerves produces: in a word, isolate the wound, by detaching it, so to speak, from animal life, without injuring its relations with organic life. This isolation, it appeared to me, might be obtained by the direct and continuous action on the wound of the vapours of chloroform or ether, without having to fear that the insensibility in the nerves would spread beyond the points immediately acted on by the anæsthetic vapour, that there would be danger from absorption, or that the stump, deprived of the reaction of the whole economy, might want the necessary irritation to carry it through its successive stages to cicatrization: since these vapours, which deprive the nerves of their functions, excite the rest of the tissues.

Experiments, with regard to the effect of local etherism on the lower animals and on man; but these are neither sufficiently numerous nor decisive to be yet brought forward.—*Lond. Med. Gaz.*, Sept. 1848.

OPHTHALMOLOGY.

63. *Structure of the Vitreous Humour.*—Dr. HANNOVER, of Copenhagen, has lately investigated this structure with great care, and his researches have controverted the generally received opinion of its being entirely a cell structure. The opinion of Pappenheim (who, having hardened the vitreous humour of an ox and a man, by treating it with carbonate of potash), that this body was composed of concentric layers, like those of an onion, is not quite correct, at least as far as the human eye is concerned, for this appearance is evidently the result of the coagulation of the albumen. M. Brücke, from whose observations Müller took the description of the vitreous humour which he has published in his Physiology, used a concentrated solution of the acetate of lead; but this physiologist's description is true only in part, as it does not define in what manner the different layers terminate. Dr. Hannover, who made his observations on the vitreous humours of several mammiferous animals which had remained in a solution of chromic acid for at least six months, gives the following description of this substance. Its structure is clearest in the horse; if a transverse section of the eye be made horizontally, and passing through the optic nerve, a great number of concentric lamellæ, which divide themselves into smaller ones, are observed; the external ones follow the internal circumference of the eye; they are thicker next to the retina, and thinner behind the crystalline lens. The vitreous humour, he says, considered as a whole, consists of several bags or cells, of various degrees of thickness, completely shut, and contained one within another. The exterior ones are naturally the largest, and the internal ones are nearer the entrance of the optic nerve than the lens. A line passing from the centre of the optic nerve, where it pierces the sclerotic, to the middle of the posterior surface of the lens, will pass through the summit of all these cells, and through the middle of their convexity. The exterior cells are softer and more transparent; the interior ones, especially those immediately behind the crystalline, are compact and thin; all the cells are thicker towards the sides of the eye, and become thin towards the optic nerve. If the eye is divided vertically,

the same onion-like structure of the laminæ, particularly in the cat, dog, ox, and sheep, is observed. In man the vitreous humour is found to be chiefly composed of slices, the arches turned outward, and the angles converging towards the axis of the eye, somewhat like the segments of an orange, and this peculiarity is better observed in infants than adults. In two eyes which were very carefully examined by this observer, 180 rays were counted, but he has not been able to determine whether each segment has its own particular membrane, or a single membrane is common to two. Viewed with a microscope, the walls of the slices appear as simple transparent membranes, without any peculiar structure, but covered with innumerable small nuclei, which the author believes to be the result of precipitation. The axis, towards which all the slices converge, is the axis of the optic nerve. Having hardened a human eye in chromic acid, he made both horizontal and perpendicular sections of it. A horizontal section through the centre of the vitreous body presented a uniform plain surface, such as would result from the section of an orange cut right through the centre from pole to pole; whereas a perpendicular section of the vitreous body corresponded with what would result from a section of an orange made at right angles with that last described, viz., a number of rays converging towards the centre, which rays correspond with the different divisions of the orange-like slices of which it is composed.—*Dub. Quart. Journ.*, May, 1848, from *Annales d'Oculistique.*

64. *Cholesterine Cataract.* By W. R. Wilde, Esq.—About six years ago, a butcher, aged forty years, consulted us for loss of vision in his right eye, the result of a blow received some years previously. Upon examination we found a hard cataract, of a remarkable yellow colour, and to all appearance of a calcareous nature. Certain portions of its external surface presented the brilliant metallic appearance known as gold-leaf cataract. From its singularity we had an accurate drawing made of it at the time, and then lost sight of the patient for some years. Twelve months ago he again applied at the hospital, in great pain, and with the eye deeply inflamed, the result of a blow which he received upon the temple a few days previously in a drunken squabble, when, to use his own expression, his eye was burst. Upon examination we found that, to a certain degree, his opinion was correct, concussion and dislocation of the lens having taken place. The central nucleus of the lens was lying at the bottom of the anterior chamber, and a quantity of brilliant matter, like broken-up gold leaf, floated through the aqueous fluid, and adhered to the back of the cornea. When the eye had been at rest for some time, the greater portion of these particles subsided to the bottom of the chamber, but upon moving the eye, or on the patient's making any exertion, they floated upward, producing the appearance which we sometimes see in the fundus of the eye, and which, under the name of "sparkling eye," has recently engaged the attention of oculists. We had an accurate drawing made of the eye in this condition. The usual antiphlogistic treatment having failed to afford relief, and the pain being most intolerable, we agreed to extract the lens, and remove as much of the offending body as possible. As this very remarkable case afforded a rare opportunity for analyzing this peculiar form of cataract, Professor Aldridge carefully examined the case, and assisted us at the operation. We made an inferior section of the lower third of the cornea with Scott's extraction knife, which is well adapted for such cases, from the curvature on the back, and the little space which it occupies. During the incision a small eye-cup was held beneath the globe, in order to receive the lens, and other means adopted to preserve as much as possible of the substance we wished to analyze. As soon as the incision was completed, the great mass of the broken-up lens and the central nucleus immediately escaped, and the remaining fragments were removed with Daviel's scoop. Immediate relief was experienced; the wound healed by the first intention, but with rather a broad cicatrix. There was no adhesion or distorsion of the pupil. The globe did not collapse, but the vision had been for many years extinct.

We give the following account of the analysis from a letter of Professor Aldridge's: "You may recollect that, previous to operation, distinct and beautiful crystals were visible, attached to the interior of the cornea, similar to scales of yellow mica. These, during the operation, you scraped off, at my request, and handed them to me, together with the extracted lens. The crystals referred to,